

## **Abstract**

A compact heat exchanger and/or fluid mixing means comprises a bonded stack of plates, the stack comprising at least one group of plates, the group comprising one or more perforated plates (10) sandwiched between a pair of primary separator plates (40, 62, 64), characterised in that each perforated plate (10) has perforations (14) arranged in rows across the plate in a first direction, with a land (16) between each adjacent pair of perforations (14) in a row and with ribs (18) between adjacent rows, the lands (16) forming barriers to flow in a first direction across the plate and the ribs (18) forming barriers to flow in a second direction across the plate, the second direction being normal to the first direction, the ribs (18) having vents (20) through a portion of their thickness, the vents (20) extending from one side of a rib (18) to the other side in the second direction, whereby flow channels are provided through the vents (20) and the flow channels lying between each adjacent pair of lands (16) provide a flow passage to cross the plates in the second direction, the passageways in the group of plates being separated from passageways in any adjacent group of plates by one of the separator plates (40).